POPULAR SCIENCE.

The Transit of Venus. The Saturday Review states that the English Government has appropriated £10,500 to equip expeditionary corps to be sent out to various parts of the world to observe the transit of Venus across the sun's disc in 4874. and thus aid in the solution of a problem in which all humanity is indirectly interested.

The problem which has to be solved, which the Astronomer-Royal has well called "the noblest problem in astronomy," is the sun's distance from the earth, and it may be well to show at the outset why and how it is thus attacked. It is well known that, to find the distance of any object on the earth from us, it is not at all necessary to walk over and actually measure mechanically the interval; it suffices to mark out a much smaller distance. called a base line, and then from either end of this base line to observe the angle between the distant object and the other end of the base. Only one condition is necessary; and, for instrumental reasons, the base line must be of appreciable length with regard to the distance of the object. Such a mode of measurement even may be

applied to the moon, which roughly a quarter of a million miles off, the observations being made, say, at Greenwich and the Cape of Good Hope, since the distance between those places—the base line—is appreciable when compared with the moon's distance. But when we come to the sun the case is different. If we could place two observers on the equator, one in longitude 0 deg., and the other in longitude 180 deg., we should then have the largest diameter of the planet as the base line; but, compared with the sun's distance, 7900 miles (the earth's largest diameter, and consequently the greatest distance between any two places on it) is instrumentally nil-our base line is inappreciable-and this, the most obvious and direct method, therefore fails,

It is generally supposed that Halley was the astronomer who first pointed out the flank attack on the sun's distance rendered possible by the transits of Venus over the sun's disc; but this is not the case. The suggestion is due to James Gregory, who suggested in 1663 that observations of Venus or Mercury, when they come between us and the sun, and are seen to pass over his disc, may give us the required information. An attempt to explain this will require a little attention. The method is really founded on one of Kepler's laws, by which mankind became acquainted with the relative distances of the planets from the sun long before they could determine their absolute distances. The thing to be done, therefore, is to measure the distance of the nearest planet from us, and then something like a ruleof-three sum tells us the distance sought, i. e. the sun's distance from us. Now the planet which in its journey round the sun comes nearest to us is Venus, and she comes. as we now know, near enough to us to allow us to apply the base line method, as in the case of the moon, were it not for the unfor-tunate circumstance that, as her path lies within ours, when she is nearest to us she is between us and the sun, and consequently has her non-illuminated side towards us, so that she is generally invisible at such times. But not always, for sometimes she comes exactly between us and the sun, and appears as a black dot on the sun's face; that is, we have a transit of Venus over the sun.

Now let us see what happens, and let us regard the sun as a screen on which the planet is visible. In the first place, an observer at the centre of the earth would see the planet travelling in a straight line over some part of the disc. An observer at the North Pole would see the planet's path projected lower down on the sun; similarly an observer at the South Pole would see the path projected higher up. In fact, as seen from the North and South Poles, the paths of the planet over the sun would be separated by a certain interval.

Now suppose the sun to be exactly as far from Venus on one side as the earth is on the other, it is evident that the apparent interval between the two paths would represent on the sun a distance exactly equal to that be-tween the two observers; but we know, to start with, that the distances of Venus from the earth and sun are as 28 to 72 nearly, so that the interval between the two paths will always bear this relation to the distance between the two stations on the earth from which they are observed. If it were possible at the same moment of time to photograph the planet on the sun from two distant stations such as we have imagined, the problem would be at once solved, and in this way. We could determine the length of the line, as seen at Venus, which joins the two stations on the earth at which the observations are made; we could then increase this in the ratio of 28 to 72, to find the exact separation of the black dots representing Venus on the photographs. Hence we could determine the size of the sun, and hence its distance. But in practice the thing is not so easy, the amount of separation of the apparent paths of the planet over our screen-the sun-can only be laboriously determined from their length, because simultaneous observations are out of the question; and as the difference in the lengths of the paths-that is, the time the planet takes to travel over the sun-is thus the point of inquiry, it is necessary to make this difference as great as possible to give accuracy to the result. From this requirement comes the necessity of choosing the stations at which the transit is to be observed, most carefully bearing in mind at the outset that the earth is a rotating globe—a consideration which complicates the matter to a tremendous extent. Hence it was that Captain Cook went to Otaheite in 1769 on the occasion of the last transit, that Father Hell observed in Lapland, that Mr. Green observed at King George's Island in the South Seas, and so on.

We will give the results of the last, and state briefly the work that has been done in the interval, in order to give an idea of the extraordinary interest which centres in the observations of the one in 1874, for observations of which the arrangements will require to be begun at once. If we take up "Ferguson's Astronomy," an admirable book written about the middle of the last century, we shall find it roundly stated that the earth's distance from the sun is 82,000,000 miles. The first transit of Venus, in 1763, brought this up to 95,178,000 miles, a number so near the one obtained in the next transit, that of 1769, that till quite recently some foul play was suspected in the observations made in the last-named year to render the results similar. Fortunately, however, we are now no longer dependent upon transits of Venus. Our instrumental means are now so greatly improved that we can apply the base line method to Mars, and, not to mention other means, even the velocity of light has been brought to bear on the problem; and, singularly enough, the result of all this modern work of more indirect methods has been to show that the value of the distance derived from the observation of the transits in the last century requires to be reduced by something like 4,000,000 miles. It might be im- ! Times.

agined from this - high number that the astronomers were erregionsly at fault, but the delicacy of the problem must be borne in mind. The error they made in the sun's angular diameter, granting it to be an error, is no grevter than the breadth of a human hair

viewed at a distance of 125 feet. But this is not all. Soon after the concordant results of all this work had so satisfied astronomers of the necessity of reducing the received value. Mr. Stone, of the Greenwich Observatory, carefully and wisely going over the old work in order to be able to direct the proposed observations, found that an excessively curious planomenon, to which we can only refer, observed at the transits, had misled the observers, and that, if its influence were taken luto account, the value of the sun's distance obtained from the transit of 1769 was marvellously concordant with the recently determined value. Mr. Stone has received the gold medal of the Royal Astronomical Society for this research, and well he deserves it. The conclusions at which he has arrived will enable the observers of the approaching transit to obtain results of the last

degree of accuracy. Disappearance of the Dog Star. A most startling astronomical fact, the ex-plosion, or rather the conflagration, of Tau Corong occurred some time since. It appears now that another and much more important star is slowly taking itself out of our system. By calculations of extraordinary minuteness and delicacy, Mr. Huggins and Father Secchi have demonstrated that Sirius and our sun are mutually receding from one another at the rate of 20'4 miles per second. In the end, therefore, though the distance of time strains the imagination, we must lose sight of Sirus—that is to say, provided we have not by that time gained the capacity of watching the more distant universe towards which he must be receding—an improbability. Nothing seems so near its final limit as the power of astronomical telescopes, while the power of the human eye, if it alters at all, probably decreases.

A Solur Steam Engine. M. Mouchot is at present exhibiting, in Paris, what he calls a solar steam-engine-an exceedingly interesting piece of mechanism, the novelty and ingenuity of which are equally striking. A spherical mirror, or reflector, of a hollow form, plated with silver, is placed in a position to receive the full strength of the falling sunbeams, the intensified heat of which is communicated to a boiler formed of glass or crystal; the water contained in which boils after the lapse of a few minutes, and the steam, playing upon the piston, sets a small engine in rapid motion, which, in turn, moves an Archimedean screw, which forces a body of water'up a considerable height. The inventor entertains sanguine hopes that his machine, once constructed to work on a large scale, will be universally preferred for all industrial operations in intertropical countries, where the ardent rays of the ma, for eight months in the year, will insure regularity in working, and constitute for them the most economical motive power. It remains to be seen whether operations on a large scale will be as brilliantly successful as the experiments at present performed by the ingenious model. Opinions are much divided concerning the practical working qualities of the invention, some maintaining that it is only an interesting toy, and others that it is destined to operate another revolution in the walks of science and industry.

Meteors in Scriptural Times. Mr. Ed. L. Garbell writes to the Spectator in reference to the destruction of the cities of Sodom and Gomorrah, maintaining that the Cities of the Plain were destroyed by a crowded group of the sodio-magnesic meteors known to be following Tempel's telescopic omet of January, 1866. Now the chances to be considered were those for the following six coincidences:-- 1. That the period deduced from the node-passages of the comet's only observed visits, the Chinese of 1366 and ours of 1866, would give a visit in the winter between B.C. 1898 and '97, in one of which years the catastrope is dated, consequently in the right biennium out of 16%.

2. That the earth's passage of the node was then about July 31, and the event was in a hot season (when Abraham needed shade at noon, and the visitors proposed abiding in the street all night) Suppose this applicable in Palestine to half the year; then we have the right half-year out of 2.

3. A fall as vertical as rain ("then the Lord rained") was possible, from this source, in no hour but that of sunrise. Hence we have the right hour out of 24.

4. Dividing each hemisphere (say) into 8 zones of latitude, this degree of verticality was possible in none of these but the third north. Hence we have the right latitude region out of 16.

Sodium, the chief element in the abnormal deposits now there (and in the salt said to have buried Lots wife) was also the chief observed by Browning and Secchi in these meteors; and is not the chief in one-thousandth of the matters on earth. But let us suppose a twentieth of all known matter to display it as prominently as the meteors did; then we have the right chief element out of 20.

6. Magnesium, the second in those salt deposits, was the only other ingredient conspicuous to Browning or to Secchi; and though it stands higher in the order of known abundance on earth that sodium, it would not be thus conspicuous in one known solid of ten. Hence we have the right second element out

Now, suppose any event not due to this comet to be recorded. The chances against the account presenting those six agreements with its elements, and no disagreement, are found by deducting 1 from 16½ x 2 x 24 x 16 x 20 x 10. In short, the discoveries of these three years have made it three millions to one that the history of Sodom is true, and this the physical cause. Now, I do not call that scientific "certainty," but it will not be easy to find in meteoric science a result resting on much stronger evidence.

A correspondent says: - "Supposing this statement to be correct, there is an incident which tends greatly to confirm it. It will be observed that the interval between the two observations is 500 years; now just 1000 years after the destruction of Sodom, in the year that King Ahaziah died, B. C. 897, we find it recorded that fire descended from heaven, upon the top of a hill, at two different times, and each time consumed a captain of fifty with his fifty."

Pentt, the Texan.

A report has been circulated that Major John H. Pratt, the reputed Texan fugitive and assassin, whose case recently come before the United States and State Courts, in this city, in a very conspicuous manner, has temporarily taken up his residence in Europe. It is known that he became frightened, and started on a voyage abroad about five days after his release by the United States Commissioner, departing from this port in a sailing vessel, under a feigned name. It is believed that his position as an officer of the Memphis, El Paso and Pacific Railroad, and his other business pursuits, will not permit his remaining away from tails country for any extended time. Should be attempt to return, however, he is like to be rearrested for murder, so strong is the feeling against him in his native State, where his crimes are alleged to have been committed.—N. Y. Times.

GENERALITIES.

The Unuse of Fessenden's Death.

A post-mortem examination of the body of Sena-tor Fessenden was made on Thursday morning. It was found that just above where the smaller bowels enter into the larger the canal had contracted so as to be entirely closed, and the bowels for a foot or enter into the larger the canal had contracted so as to be entirely closed, and the bowels for a foot or more above the obstruction were in a high state of inflammation. A perforation were in a high state of inflammation. A perforation was also found above the obstruction, and it was the opinion of the physicians that at the time he was called the doctor, on Tuesday, the 31st day of August, he made this repture, and that human skill could avail nothing towards saving his life; and that when he felt the severe pain a few hours before his death, after returning to his bed, he probably increased this rupture, bringing on immediate dissolution; that this trouble had been coming on for some time back, Mr. Fessenden having been a sufferer from chronic diarrhom for at least a year past; and that the few diarrhoca for at least a year past; and days before the physicians were called the constipa-tion, which he looked upon as a favorable sign toward restoring a healthy action to the system, was really a most alarming symptom.

London Life Insurance Fraud.

The Pall Mall Gazette says:—"Stripped of details, the reveiations which were made at the meeting of the shareholders of the Albert Life Assurance Company may be condensed into a very simple story. The collapse of the office was clearly due to a reckless extension of business. Nothing seems to have been thought of except how to multiply the amount of premiums, without reference to the liabilities thereby incurred. Not content with the issue of individual policies, the managers launched out into wholesale purchases of insurance contracts. One company after another was thus absorbed, but while the annual sum of premiums was enlarged, the expenditure expanded also, and at a ruinous rate. The secret of this policy is not far to seek. Mr. Kirby, the manager, was mainly paid by a percentage on the premiums, and every amalgamation was celebrated by a distribution of douccurs among the gentlemen concerned. In one case £25,000 was so divided between three officials London Life Insurance Fraud. case £25,000 was so divided between three officials of a bought-up company, the directors also pocketing their £200 apiece. As much as £15,000 is said to have been awarded to Mr. Sheridan in another instance, and Mr. Price, the actuary, said he could read a long list of grants of this kind to different persons.

Scandal Among the Prussian Nobility. There are scandalous rumors in circulation in Berlin in regard to the conduct of old Prince Charles, the brother of King William the First. The Prince is said to have seduced the daughter of one of his is said to have seduced the daughter of one of his aid-de-camps, and the father of the daughter, after denouncing Prince Charles in unmeasured terms, it is reported, beat him severely with his riding whip, when the Prince commenced giving him sneering answers and ordered him out of the room. This is a second time when a Prince of the royal house of Prussia was severely whipped in consequence of a love affair. The first time the ratigation was administered to no other than King William himself, who, one night, mufted in his William himself, who, one night, mustled in his cleak and with his fatigue cap on, paid a secret visit to Ida Pellet, the beautiful ballet girl. On the stair-case he was met by a young assessor, the ardent lover of the danseuse, who, upon seeing that a man was about to visit his inamorata at so late an hour, and unaware of the fact that he had the King himself before him, attacked his Majesty and gave him a sound thrashing. When the young man found out whom he had attacked, he went to Carlsbad and compilited excluded.

American Enterprise. While we, says the Montreal Pays, are disputing, the Americans are marching in advance; we speak, they act. The talking belongs to us: the execution to them. While the future Governor of the Northwest has scarcely finished a tour over the nearest limits of the domain; while the character, the length, and selection of a route in that territory is discussed in the press and the ministry, the United States are already at work and are now finishing the first sec-tion of the Northern Pacific Railroad. The Toronto Leader says on the same subject:—The Americans thus monopolize the Northwest, and secure its commerce by constructing a railrard, while we make a carriage-road, which, when finished, if it ever will be, will be as useful as if it were down 40 feet in the middle of Lake Supetior.

ı	SPECIAL NOTICES.
	REPUBLICAN MASS MEETINGS TH
	UNION REPUBLICAN STATE CENTRAL CO
	MITTEE bave made arrangements for MASS MEETING
	as follows, viz :
	Troy, Bradford countySept. 4, 186
	Towanda, " Sept. 6, 186
	Honesdale, Wayne countySept. 7, 180
	Kittanning, Armstrong countySept. 7, 180
	Beaver, Beaver countySept. 7, 186
	Bradford, Bradford countySept. 7, 180
	Somerset, Somerset county Sept. 14, 18:
	The meetings at Troy, Towards, and Honesdale will !
	addressed by Governor J. W. Geary, Hon, John Scott, ar
	Hon, W. D. Kelley.
	Governor O. P. Morton of Indiana, Hon. John A. Bin
	ham of Ohio, and Hon, Wayne McVeigh of Pennsylvan

4	ham of Obio, and Hon. V will address the meeting	Vayne McVeigh of Pennsylva at Pittsburg.	TI)
		JOHN COVODE, Chairma	m.
	Gro. W. Hamersley, M. O. Quay, W. J. P. White, S. F. Gwinner,	Secretaries.	19t
	The state of the s	The state of the s	

JOSE POEY, Medico-Cirujano de la Universidad de la Habana. recibe consultas de 9 a 11 de la manana y de 35 a 6 de la tarde en su oficina calle Nueve (sud) No. 735. Residencia en la calle de Green, No. 1817.

DR. JOSEPH POEY, Graduate of the University of Habana (Cuba), has re-moved his office to No. 735 S. Ninth street. Residence, No. 1817 Green street. Office Hours-9 to 11 A. M. 3½ to 6 P. M.

THE PENNSYLVANIA FIRE INSUR-ANCE COMPANY.

PHILADELPHIA, Sept. 6, 1869. The Directors have this day declared a dividend of SEVEN DOLLARS AND FIFTY CENTS per share on the capital stock of the Company for the last six months, which will be paid to the stockholders or their legal repre sentatives, after the 15th inst.
9 6 9t WILLIAM G. CROWELL, Secretary.

QUEEN FIRE INSURANCE COMPANY LONDON AND LIVERPOOL, CAPITAL, £2,000,000. SABINE & ALLEN, Agents, FIFTH and WALNUT Streets.

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J. E. GOULD, NO. 923 CHESNUT Street, is selling Steck & Co.'s and Haines Bros'. Pianos and Mason & Hamlin's Cabinet Organs nearly as low as at any former time.

NOTICE IS HEREBY GIVEN THAT AN NOTICE IS HERE BI GIVER A THE application will be made at the next meeting of the Legislature of Pennsylvania for the incorporation of a Benk, in accordance with the laws of the Commonwealth, to be entitled THE FRANKLIN BANK, to be located at Philadelphia, with a capital stock of five hundred thousand dollars, with a right to increase the same to a million of dollars.

NOTICE IS HEREBY GIVEN THAT an application will be made at the next meeting of the Legislature of Pennsylvania for the incorporation of a Bank, in accordance with the laws of the Commonwealth, to be entitled "THE MARKET BANK," to be located at Philadelphia, with a capital stock of one hundred thousand dollars, with a right to increase the same to five hundred thousand dollars.

NOTICE IS HEREBY GIVEN THAT an application will be made at the next meeting of the Legislature of Pennsylvania for the incorporation of a Bank, in accordance with the laws of the Commonwealth to be enritled THE BUTCHERS' AND DROVERS BANK, to be located at Philadelphia, with a capital of two hundred and fifty thousand dollars, with a right to increase the same to a million of dollars.

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NOTICE IS HEREBY GIVEN THAT AN application will be made at the next meeting of the Legislature of Pennsylvania for the incorporation of a Bank, in accordance with the laws of the Commonwealth, to be entitled "THE BANK OF AMERICA," to be located at Philadelphia, with a capital of five hundred thousand dollars, with a right to increase the same to two millions of dollars.

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rator of the Colton Dental Association, is now the only one in Philadelphia who devotes his entire time and practice to extracting teeth, absolutely without pain, by fresh nilrons exide gas. Office, 1027 WALNUT St. 1 265

LEGAL NOTICES.

ESTATE OF AQUILA HAINES, DECEASED. AQUILA HAINES, deceased, having been granted to the undersigned, all persons indebted to said estate are requested to make payment, and those having claims to present the same without delay to Or his Attorney, 15 lewer.

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Twelfth and Chesnut and Market.

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FEMALE COLLEGE, BORDENTOWN, N. J.—This institution, so long and so favorably known, continues to furnish the best educational advantages, in connection with a pleasant Christian home. Catalogues, with terms, etc., furnished on application. College spens September 16.
727 am JOHN H. BRAKELEY, President.

HAMILTON INSTITUTE, DAY AND Boarding School for young ladies, No. 3810 CHES-NUT Street, will re-open MONDAY, September 6. For circulars, containing terms, etc., apply at the school, which is accessible to all parts of the city by the horse cars. P. A. CREGARAA, M., Principal,

EDUCATIONAL. RUGESY ACADEMY for BOYS, No.1415 LOCUST Street, EDWARD CLARENCE SMITH. A. M., Principal,

Young men prepared for tustness or high standing in Col-lege. Circulars at No. 122c CHESNUT Street. Next session begins September 12th. 717 3m 7 THE MISSES ROGERS, NO. 1914 PINE STREET, have reopened their School for Young La dies and Children.

THE PHILADELPHIA SCHOOL OF DE-SIGN FOR WOMEN, NORTHWEST PENN SQUARE, will Recept on MONDAY, September 20, 5 9 R. T. W. BRAIDWOOD, Principal.

M ISS BURNHAM'S SCHOOL FOR YOUNG Ladies opens September 20. Personal interview can be had, after September 6, at No. 1616 Filbert street. For circulars, address F. E. GOURLAY, Esq., No. 605 WALNUT Street.

H. D. GREGORY, A. M., WILL HEOPEN HIS
MARKET Street, on MONDAY, Sept. 8. 825 lm* R. G. F. BISHOP, TEACHER OF SINGing and Piano, No. 23 S. NINETEENTH St. 1821 1m

THE MISSES GREGORY WILL REOPEN their SCHOOL FOR YOUNG LADIES, No. 3917 LOCUST Street, on MONDAY, September 13, 830 lm* M ISS BONNEY AND MISS DILLAYE WILL reopen their BOARDING and DAY SCHOOL (twentieth year), Sept. 15, at No. 1615 CHESNUT.Street. Particulars from Circulars.

WEST PENN SQUARE SEMINARY FOR Young Ladies, No. 5 S. MERRICK Street (late Mrs. M. S. Mitchell's). The Fall Term of this School will begin on WEDNESDAY, September 21. Miss AGNES IRWIN, Principal. 93 fmw 81

MISS CLEVELAND DESIRES TO ANnounce that she will open on MONDAY, September
20th, at No 2023 DE LANCEY Place, a School for the education of a limited number of Young Ladies.
Circulars may be had on application at No. 243 S.
EICHTH Street, between the hours of 9 and 2.

Miss E. T. BROWN desires to announce that she will open on TUESDAY, September 21, at No. 4035 CHESNUT Street, West Philadelphia, the late Residence of the Rev. J. G. Butler, D. D., a school for Young Ladies. Oirculars may be last on application at the school, on and after Wednesday, September 15.

No. 1207 FILBERT Street

THE EDGEHILL SCHOOL,

MONDAY, September 6, 1889, For circulars apply to Rev. T. W. CATTELL, Principal.

LARS a term, payable in advance.

9694

FRANCIS A. JACKSON, Secretary. LAFAYETTE COLLEGE.

Owing to the work of remodelling the main building,

Classical Course, Technical Courses in Civil Engineer-

A CADEMY OF THE PROTESTANT EPISCOPAL CHURCH,
(FOUNDED A. D. 1785.)
S. W. Cor. LOCUST and JUNIPER Streets.
The Rev. JAMES W. ROBINS, A. M., Head Master,
With Ten Assistant Teachers.
From September I, 1869, the price of Tuition will be
NINETY DOLLARS per annum, for all Classes: payable
half yearly in advance.

The Session will open on MONDAY, September 6. Applications for admission may be made during the preceding week, between 10 and 12 o'clock in the morning.

JAMES W. ROBINS,
Head Master.

T. BRANTLY LANGTON having leased the upper part the Third National Bank Building, will reopen h s School en MONDAY, tember 13. The facilities of this building for school purposes will be apparent upon inspection. The Gymnasium will be apparent upon inspection.

to fit boys for College, Polytechnic Schools, or Commercial Life.

Circulars containing full information respecting Primary
Department, College Classes, the study of Vocal Music,
Art, etc., may be obtained by addressing the Principal as
above. The rooms will be open for inspection after
August 21.

8 21tf

THE HILL"

SELECT FAMILY BOARDING SCHOOL,
An English, Classical, Mathematical, Scientific
and Artistic Institution,
FOR YOUNG MEN AND BOYS!
At Pottstown, Montgomery County, Pa.
The First Term of the Nineteenth Annual Session will commence on WEDNESDAY, the 8th day of September next. Pupils received at any time. For Circulars addresse REV. GEORGE F. MILLER, A. M.
Principal.

Y. LAUDERBACH'S CLASSICAL, SCIENTIFIC, AND COMMERCIAL

FOR BOYS AND YOUNG MEN, ASSEMBLY BUILDINGS, Entrance No. 108 S. TENTH Street.

Entrance No. 103 S. TENTH Street.

This school presents the following advantages:—
Finely-ventilated class-rooms, with ceilings thirty feet in height, giving each pupil more than double the usual breathing space.

Wide, massive stairways, rendering accidents in assembling and dismissing almost impessible.

A corps of teachers every one of whom has had years of experience in the art of impersing knowledge and making study interesting, and consequently, profitable.

A mode of teaching and discipline calculated to make school attractive, instead of burdensome, to the pupil—an indispensable requisite for complete success.

Applications received at the Academy from 10 A. M. to a P. M., daily, on and after August 23.

Catalogues containing full particulars and the names of many of our leading citizens, patrons of the institution, may be obtained at Mr. W. F. Warburton's, No. 439 Chesnut street, or by addressing the Principal, as above.

H. Y. LAUDERBAUH,

Late Principal of the Northwest Public Grammar School.

8 17 Im

MISS JENNIE T. BECK, TEACHER OF Piano, will resume her duties September 6, at No 746 FLORUDA Street, between Eleventh a d Twelfth

WEST CHESNUT STREET INSTITUTE.

SINGING ACADEMY, No. 812 ARCH Street, Second Story Front.—The undersigned having secured the above central location, is engaged in fitting it up for class instruction in the Rudiments of Singing, Vocalization, Glee, and Madrigal Singing. Full particulars in a few days. Private Lessons as usual.

STEVENS DALE INSTITUTE, SOUTH AMBOY, N. J.—A Family Boarding School for Boys—will commence on September 6, 1869. Location unsurpassed in everything desirable for a school. The instruction will be thorough and practical, embracing a careful preparation for college. Circulars sent on request.

J. H. WITHINGTON, A. M., Principal, S181m. SOUTH AMBOY, N. J.

R E C T O R Y S C H O O L,

Rev. C. W. EVEREST, Rector, aided by five resident
assistants. The school is closing its twenty-sixth year,
and refers to its old pupils, found in all the professions,
and every department of business. Thorough physical
education, including military drill, boating, and swimming in their season. Age of admission, from nine to
fourteen. Torms, \$750 per annum.

The fall session begins September 7.
Reference—Rt. Rev. J. Williams, D. D.
Hamden, July 15, 1939.

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Tanden, only 16, 1898.

VERSITY OF PENNSYLVANIA.

FACULTY OF ARTS.

The first term of the College year will begin on WEDNESDAY, September 15, at 10 o'clock. Applicants for
admission will apply for examination at 1615 o'clock. Students may pursue either the course of studies for the DE,
GREE OF BACHELOR OF ARTS or the DEGREE
OF BACHELOR OF SCIENCE, in which the Ancient
Larguages are not studied, but additional time is given
to the Mathematics and the Modern Languages, or they
may pursue such separate studies as they desire, and which
the Faculty may approve.

Fees for either of the full courses, THIRTY-FINE DOLLARS a term, payable in advance.

the opening of the Fall Term is deferred to THURSDAY, September 16, 1869. Examination for admission on the

ing, Chemistry, and Mining and Metallurgy, and a Post Graduate Course. Requirements for admission may be known by addressing President CATTELL. 8 28 3w

NINETY DOLLARS per annual half yearly in advance.
French, German, Drawing, and | Natural Philosophy are taught without extra charge.
By order of the Trustees,
GEORGE W. HUNTER, Treasurer.

"WEST PENN SQUARE ACADEMY."

REV. DRS.—Meigs, Schaeffer, Mann, Krauth, Seiss, Muhlenberg, Stover, Hutter, Stork, Cenrad, Bomberger, Wylie, Sterret, Murphy, Cruikshanks, etc.
HONS.—Judge Haddow, Leonard Myers, M. Russell Thayer, Benj. M. Boyer, Jacob S. Yost, Hiester Olymor, John Killinger, etc.
FSQS.—James E. Caldwell, James L. Claghorn, C. S. Grove, T. C. Wood, Harvey Bancroft, Theodore G. Boggs, C. F. Norton, L. L. Houpt, S. Gross Fry, Miller & Derr, Charles Wannemacher, James, Kent, Santee & Co., etc.

a Boarding and Day School for Boys, will begin its next MERCHANTVILLE, NEW JERSPY.

ASELL FEMALE SEMINARY (AT AU-Boston and Albany Ratirosd). For soventeen years a leading New England Seminary. Not excelled in thorough English or artificial training, nor in highest accomplishments in Modern Languages, Painting, and Music. Location for health beauty, and refining influences, unsurpassed. Next year begins Sept. 30. Address. 727 6w CHARLES W. GUSHING.

preceding day at 8 o'clock A. M.

YY S. W. corner of MARKET Street and WEST PENN SQUARE.

under the immediat ervisi of Dr. Jensen, and is being abundantly supplied with apparatus for the practice of either light or heavy gymnastics.

The course of instruction embraces all that is needed